Theorising the development and derailment of Learning Agility

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Summary

Learning agility is "the willingness and ability to learn from experience, and to subsequently apply that learning to perform successfully under new or first-time conditions" (De Meuse, Dai and Hallenbeck, 2010, p. 120). This meta-competency predicts workplace performance and potential and is critical to leader success in the current dynamic and disruptive business climate (Povah, 2012; De Meuse, 2019). Learning agility is now considered developable (Thomas and Harvey, 2021) but current theories do not explain *how* or *why* it develops or declines. This paper contributes to management scholarship by presenting a new theory to address this gap. Learning agility is predicted by a combination of stable and malleable individual differences and environmental factors. Learning agility represents an increased likelihood of engaging in behaviours and strategies learnt from experience which enhance learning from experience. Positive outcomes of these strategies reinforce learning agility through the mechanism of selection by consequence.

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Introduction.

The current business environment is commonly described as VUCA; volatile, uncertain, complex, and ambiguous (Latif and Ahmad, 2020; Sachdev, 2022). The disruption caused by the Covid-19 pandemic illustrates the relevance of VUCA (Bennett and McWhorter, 2021). Beyond the pandemic, the rapid advancement of technology, strategy, globalisation, and consumer demands often present novel problems requiring accelerated learning and adaptation (Clark and Gottfredson, 2008; Latif and Ahmad, 2020; Sachdev, 2022). Given the VUCA nature of work, managers face a difficult challenge. They must equip their employees with a prescient ability: knowing what to do when they do not know what to do. For years, it has become increasingly apparent that specific knowledge and skills advantageous at one time could be irrelevant, even detrimental, later (Clark and Gottfredson, 2009). Therefore, learning has moved from one-off to continuous and dynamic, stressing the need for learners to be collaborative and adaptive (Clark and Gottfredson, 2009). To navigate this fast-paced VUCA environment, organisations are looking for individuals who embody learning agility (Clark and Gottfredson, 2009; Latif and Ahmad, 2020; Harvey and De Meuse, 2021; Sachdev, 2022). Learning agility is "the willingness and ability to learn from experience, and to subsequently apply that learning to perform successfully under new or first-time conditions" (De Meuse, 2010, p. 120).

Learning agility has been presented as both a static and a dynamic construct. Lombardo and Eichinger (2000) describe it as a stable predictor of long-term potential: a measurement today should predict success twenty-five years on. In contrast, Carette and Anseel (2012) postulate that learning agility is expressed when epistemic motivation (the drive to understand a given situation deeply) is present, suggesting that learning agility is a more dynamic and context-dependent construct. Now, researchers view learning agility as a developable meta-competency (Harvey and De Meuse, 2021), but theoretical models of learning agility are still static[1]. Learning agility is presented as a construct a person has or does not have (in varying degrees) that predicts positive work outcomes. Current theorising does not offer a process of how learning agility develops. Without an understanding of how learning agility develops, targeting learning agility development may be challenging. This paper contributes to management scholarship by presenting a new theory of learning agility development and derailment: the LADD theory.

Selection by consequence: A mechanism for Learning Agility development

Current learning agility theorising recognises that both personal and environmental factors influence learning agility, which is expressed through learning agile behaviours and strategies, which in turn leads to positive outcomes such as enhanced learning or performance (Harvey and De Meuse, 2021). However, current theories do not explain how one learns to be learning agile. Current theories lack a clear *mechanism* for how learning agility develops or derails. This gap in theory restricts managers' ability to develop learning agility and prevent derailment in their high potential, high performing employees. The proposed theory extension here aims to address this process of development (and derailment) in learning agility. This paper proposes that learning agile behaviours and strategies are *selected by consequence*. When these behaviours are rewarded, they are reinforced, which causes learning agility to develop over time. When conditions change such that these behaviours are no longer rewarded, they are no longer reinforced, and learning agility development is limited or derailed. Thus, if the

[1] Notable previous theories of learning agility include that of DeRue, Ashford and Myers (2012) and more recently, Harvey and De Meuse (2021). For a review of the conceptual evolution of the learning agility construct, see De Meuse (2017).

consequence is positive then the behaviour will be repeated, if the consequence is not positive the behaviour is less likely to be repeated: behaviours within an individuals' repertoire are selected by consequence (Skinner, 1981).

Selection by consequence is a mechanism drawn from the behaviourist school of thought. Behaviourism defines learning as "observable increases, decreases or maintenance of identified behaviours" (Kay and Kibble, 2016, p. 24). Many authors, such as Burke and Smith (2018), define and measure learning agility as a set of behaviours (for example, reflection or feedback-seeking). If learning agility represents a set of identified behaviours (learning agile behaviours and strategies) and if behaviourism defines learning as observable changes in identified behaviours, then it closely aligns with the idea of learning agility development. For example, an individual can learn to increase the frequency in which they engage in feedback-seeking following positive consequences of this behaviour. Likewise, derailment would be the decrease of identified behaviours. For example, decreasing the frequency of feedback seeking following a negative consequence. Critically, this paper is not arguing that behaviourism is superior to other learning theories, or that other theories do not have a place in understanding learning agility or the acquisition of learning agile behaviours and strategies[2]. Rather, this paper argues only that the utilisation of the 'selection by consequence' mechanism to understand how learning agile behaviours and strategies develop or derail may offer *a simple, parsimonious* explanation for the results observed in the literature. This mechanism can describe both the acquisition (development) and extinction (derailment) of behaviours (Biglan, 2003). A good theory uses the simplest explanation possible; Occam's razor (Wacker, 1998).

Selection by consequence is highly dependent on the demands of the environment. As explained by Skinner (1981), behaviour is a function of the interaction between an individual and their environment. Through operant conditioning, new responses are strengthened (reinforced) by subsequent events. Successive approximation shapes more complex behaviours (Epstein, 1991), but the same mechanism drives the movement of behaviours from spontaneous to learnt, from random to purposive; that mechanism is selection by consequence. The LADD theory posits that the complex behaviours which fall under 'learning agile behaviours and strategies' are reinforced by positive outcomes which can be rewarding intrinsically (such as the satisfaction of a job well done) or extrinsically (such as the receipt of praise or promotion). Inherent in this selection by consequence is that a behaviour is only as 'good' as it is effective under the current environment. Thus, whilst risk-taking (for example) may be advantageous in some roles, it may be problematic in others. Selection by consequence may explain the different profiles of learning agility observed by some researchers (e.g., Smith, 2015), whereby those in different positions may have similar levels of overall learning agility but with different dimensional profiles (i.e., based on different behaviours).

This paper proposes that both learning agility development and derailment are a result of selection by consequence. Learning agility development and derailment is dependent on whether learning agility (and its associated behaviours and strategies) is intrinsically or extrinsically rewarded. If rewarded, learning agility develops. If not rewarded, learning agility declines and derails.

The propositions of the LADD Theory

Five key propositions of the LADD (learning agility development and derailment) theory are put forth to explain the emergence, development, and decline of learning agility. This paper will now review the research and thinking behind each proposition in turn. Finally, a complete

[2] For example, the acquisition of new learning agile behaviours and strategies may be understood through, for example, social learning theory (Bandura, 1977); an individual could acquire 'feedback-seeking' as a behaviour by observing and modelling the behaviours of others.

illustration of the theory will be presented. This complete representation is only introduced after explaining each proposition in turn to facilitate an understanding of the complex phenomena which is learning to learn from experience.

<u>Proposition 1:</u> Current learning agility is predicted by a combination of (and interactions between) stable individual characteristics, malleable individual differences, and environmental factors.

When exploring the learning agility literature, an array of predictors for learning agility emerge which can be categorised into stable individual characteristics, malleable or context-dependent individual differences, and environmental factors. The LADD theory postulates that the combination of stable individual characteristics, malleable individual differences and environmental factors dictates the extent to which someone is willing and able to take lessons from experience and apply those lessons to new situations; i.e., how learning agile they are at a given point (*Figure 1*).

Stable individual characteristics. In this conceptualisation, stable individual characteristics refer to those not easily amendable by management or organisations rather than permanently fixed qualities. For example, it is beyond an organisation or manager's power to change someone's age, yet an individual ages, nonetheless. It does, however, also include relatively stable factors such as personality and cognitive ability. Personality (in particular, scores on openness to experience scales) predicts learning agility (Connolly, 2001; Laxson, 2018; Miller, 2018; Kim, 2019). Likewise, cognitive ability is positively associated with learning agility (Allen, 2016; Miller, 2018). Stable individual differences may also include age (Ayu, Handayani and Ambara, 2021), gender (Sung, 2017), and neurobiological differences in tolerance for arousal responses (Ruyle, 2021). These stable individual characteristics may indicate a 'baseline' level of ability or willingness to learn from experience and apply these lessons to new situations.

Stable individual differences also include interindividual variations in experience as changes to these are either slow (time required to have new experiences) or difficult (a manager can do little to erase past experiences). Research suggests that experiences are predictors of learning agility. Examples include youth exposure to team sports and the interpersonal relationships they foster (Choi, 2018), variations in work experience including previous job roles (Fojutowski and Mann, 2017; Kim, 2018), and engagement in formal education and development programs (Dries *et al.*, 2008; Dries, Vantilborgh and Pepermans, 2012; Juhdi *et al.*, 2012; Park, 2019; Özgenel and Yazıcı, 2021). More experience may enhance an individual's ability to learn from experience or apply lessons from past experiences: the process of learning from experience may be refined through practice (the *more able* hypothesis). On the other hand, less experience may also impact willingness to learn from experience: for those with less experience, there may be a greater need to learn new lessons (the *more willing* hypothesis).

Malleable individual differences. Malleable individual differences refer to those that are context-dependent, such as epistemic motivation (Carette and Anseel, 2012), or amenable to change or training such as openness to feedback (Allen, 2016) or positive attitudes towards (and perceived competency in) digital technologies (Kim, Hong, and Song, 2018). Research has identified several constructs positively associated with learning agility that may be considered as malleable individual difference predictors. For example, cognitive flexibility and tolerance for ambiguity (Allen, 2016; Burke and Smith, 2018), generalised self-efficacy (Burke and Smith, 2018; Khildani, Suhermin and Lestariningsih, 2022), meta-cognition (Kim, 2019),

motivation to learn (Allen, 2016), organisational and job engagement, drive for high performance (Juhdi *et al.*, 2012), and a learning goal orientation (Allen, 2016; Burke and Smith, 2018; Drinka, 2018). Likewise, learning agility may be characterised by an absence of other individual differences. Learning agility is negatively related to an external locus of control, resistance to change, risk aversion and reactance (Burke and Smith, 2018). The abundance of malleable individual difference predictors of learning agility may highlight how situationally and motivationally dependent the expression of learning agility might be. Such malleable individual differences may influence learning agility along two processes; impacting willingness (to learn from experience and apply those lessons) and impacting ability (to learn from experience and apply those lessons). For example, high epistemic motivation would be a malleable individual difference impacting willingness, whereas cognitive flexibility may more closely relate to ability.

Environmental differences. An individual's environment influences learning agility. For example, employees under a transformational leadership style, with organisational diversity acceptance (Park, 2019), an organisational learning culture (Saputra, Abdinagoro and Kuncoro, 2018; Saputra, Satispi and Herlina, 2021), a psychologically safe climate (Catenacci-francois, 2018), or a positive error management climate (Choi, Lee, and Jacobs, 2015; Kim, 2018) tend to show higher levels of learning agility. The LADD theory would postulate that these environments either (a) reward learning agility and learning agile behaviours, thus contributing to learning agility development by reinforcement, or (b) create environments that are conducive to the willingness, ability, and opportunity of their employees to learn from experience and apply those lessons of experience. Of course, these two mechanisms for environmental influence on learning agility are not mutually exclusive.

Madhok and Keyhani (2012) theorise that in an organisational culture which is particularly challenging, such as that of entrepreneurs from emerging economies, high learning agility is more likely to be present and more critical to success (than learning ability). This may because in a rapidly changing environment there are more opportunities to apply lessons from experience to a new situation. Likewise, such findings can be interpreted through the lens of selection by consequence; environments that reward rapid learning and unlearning are associated with individuals with higher learning agility. Beyond organisational environment, the nature of the work that an individual does also appears to impact the expression of learning agility. For example, Drinka (2018) found that those in leadership and administrative roles had higher mean levels of learning agility than front desk or lab technicians. Likewise, Catenacci-Francois (2018) found a significant correlation between learning agility and job role. Kim (2018) found learning agility to be significantly related to immersion, job challenge, job autonomy and job burden. Fojutowski and Mann (2017) found that learning agility positively relates to task complexity within the current job role. As with stable individual differences, more complexity at work may make individuals more willing (through necessity) or more able (through experience) to learn from experience and apply those lessons.

As well as looking at mean differences in overall learning agility scores across roles, it is also possible to explore differences in the patterns of learning agility profiles (i.e., scores on different dimensions of learning agility). Presenting the data this way, hedge fund senior analysts and portfolio fund managers showed greater 'innovating' but low 'reflecting' (relative to the other roles tested) (Smith, 2015). In contrast, CEOs, corporate managers, and corporate C-suite roles showed lower 'innovating' and greater 'reflecting' (Smith, 2015). It remains unclear whether individuals are in the role because of their learning agile profile or whether the learning agile profile changes as a function of the role. However, the LADD theory would suggest that differences in these profiles are a result of selection by consequence; the different profiles emerge because variations in external pressures (which the theory places under

environmental differences) mean that learning agile behaviours and strategies are differentially rewarded and thus reinforced

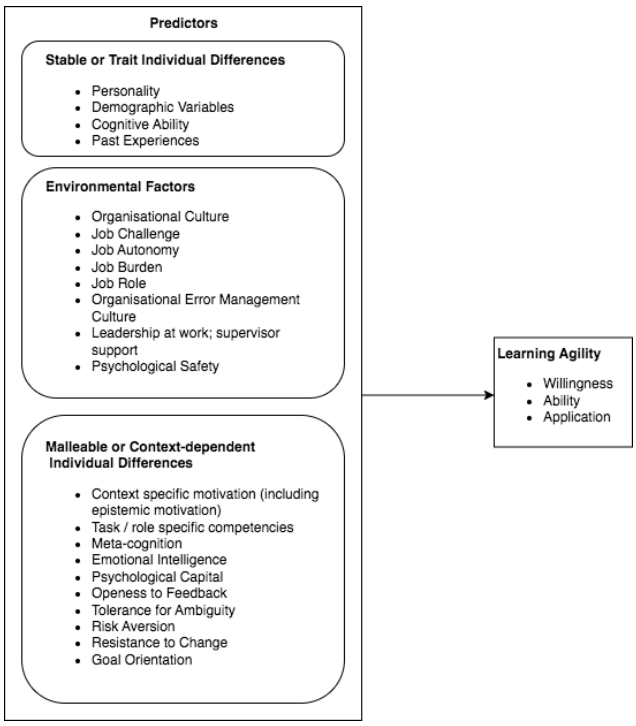

Figure 1 Illustration by the author of proposition 1 of the LADD theory; the variables within this illustration are derived from observed relationships in the literature.

Interactions between predictors. Researchers have argued that it is in understanding how antecedents interact to predict learning agility that the greatest potential for value in the learning agility construct is present (Hezlett and Kuncel, 2012; Reeve *et al.*, 2015). Park (2019) found that, due to greater feedback seeking (a malleable individual difference), learning agility was higher in lower-level jobs than higher ones (an environmental predictor). Kim's (2019) results suggest that openness to experience (a stable individual difference) has a greater effect on learning agility in employees with high versus low job challenge (an environmental predictor). It is unlikely that predictors of learning agility work in isolation. In general, the more of these factors an individual has, the greater their current learning agility *(Figure 1)*. However, it may be that some are more necessary than others, or some negate or accentuate the effects of others. For example, Carette and Anseel (2012) suggest that epistemic motivation is critical to understanding when learning agility would be activated. Learning agile behaviours and strategies manifest when individuals are motivated to understand a situation deeply. Thus, whilst learning agility may increase with experience, learning agility may manifest most in new and challenging situations – when epistemic motivation is high. If behaviour is an interaction between person and environment (Skinner, 1981), learning agility is likely also. Exploring such interactions may add nuance to our understanding of under which conditions learning agility develops. It is likely a combination of personal and environmental factors that predicts the expression of learning agility in each situation.

<u>Proposition 2:</u> Learning agility increases the use of learning agile behaviours and strategies.

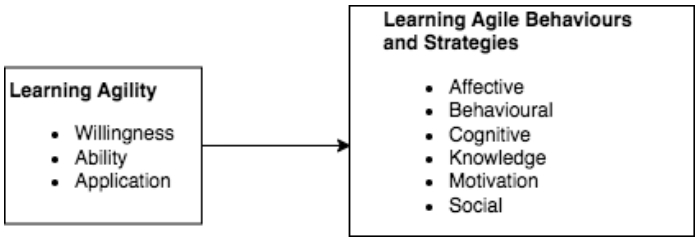

Figure 2 Author's illustration of proposition 2 of the LADD theory, with learning agile behaviours and strategies derived from the theory by Harvey and De Meuse (2021).

As illustrated in *Figure 2*, the second proposition of the LADD theory is that learning agility increases the likelihood of an individual adopting **learning agile behaviours and strategies**. The categories of learning agile behaviours and strategies presented in *Figure 2*, are based on those from Harvey and De Meuse (2021). Learning agile behaviour or strategies can be considered as behaviours and strategies that can be learnt from experience and that facilitate the learning and application of lessons of experience. To make the clear differentiation; learning agility refers to the general tendency of an individual to want to, and be able to, draw and apply lessons from experience whereas learning agile behaviours and strategies refers to the means they use to do so. A learning agile individual will be more willing and able to engage in learning agile behaviours and will apply lessons from their previous use of such strategies and in doing so refine these strategies: i.e., learning agile behaviours and strategies are themselves learnt from experience and refined through selection by consequence.

The first formal identification of learning agile behaviours and strategies in learning agility theorising came from DeRue et al. (2012) who recognised that learning agility would be associated with an increased probability of engaging in certain behaviours. Such behaviours included experimenting, feedback-seeking and reflection, cognitive simulations, counterfactual thinking, and pattern recognition. This idea was later expanded upon by Harvey and De Meuse (2021). Like DeRue et al. (2012), they recognised that learning agile individuals would be more likely to engage in certain behavioural and cognitive processes. Harvey and De Meuse (2021) expanded the proposed behaviours and strategies. Under behavioural processes, they included information seeking, active listening, applying formal structures to learning processes, seeking opportunities, risk-taking, and behavioural flexibility. Under cognitive processes, they included cognitive flexibility, curiosity, open-mindedness, reflectivity, and distillation of lessons of experience. Harvey and De Meuse (2021) also recognised the role of learning agile behaviours and strategies in terms of affective (emotional awareness and regulation) and knowledge (awareness and implementation of learning strategies, seeking insights into strengths and weaknesses) domains. Finally, they considered behaviours and strategies relating to motivation (learning and growth orientation, a drive to seek challenges to grow and evolve, resilient and resourceful) and sociality (socially intelligent and flexible, able to leverage relationships, manage conflict, inclusivity, and ability to manage diversity).

Dai and De Meuse (2021) frame learning agile behaviours and strategies along two dimensions; the components of learning agility (motivation, abilities, and application) and the

learning context (cognitive, social, and self) and, in doing so, create a 3x3 matrix of constructs considered as learning agile behaviours and strategies. Intellectual curiosity, open-mindedness and being a 'personal learner' are examples of learning agile *motivations* in the cognitive, social, and self-sphere. Unconventional thinking, social astuteness, and self-reflection are abilities associated with learning agile *abilities* in the cognitive, social, and self-sphere. Finally, cognitive flexibility, social flexibility, and self-regulation reflect the *application* of learning agility applications in the cognitive, social, and self-sphere.

Likewise, Kolb (1984) identified that each stage of experiential learning leans on different abilities – these abilities can also be reframed as learning agile behaviours and strategies. Indeed, many of these abilities map onto learning agile behaviours and strategies. For example, Kolb's (1984) recognition that engagement in a concrete experience requires individual's "ability to involve themselves fully, openly, and without bias in new experiences" (p. 30) is akin to the motivational aspects of learning agility outlined by Dai and De Meuse (2021): intellectual curiosity, open-mindedness, and being a personal learner.

Conceptualising learning agility as a singular construct which lends itself to this broad array of 'learning agile behaviours and strategies' can appear problematic. This challenge is more complex because many of the constructs named as learning agile behaviours and strategies are likewise placed as antecedents of learning agility. For example, in the model by Harvey and De Meuse (2021), behavioural and cognitive flexibility are listed as both central mechanisms of learning agility (antecedents) and as learning agile behaviours and strategies (outcomes). However, this overlap is less problematic when one considers learning agility a meta-competency: the amalgamation of traits and qualities conducive to learning from experience and applying lessons of experience to new situations. Critically, a concept, such as feedback seeking, can appear be both a predictor of learning agility and a learning agile behaviour and strategy. However, it does so in the context of the other antecedents (environment and person). Thus, whether feedback seeking is utilised as a learning agile behaviours or strategies depends on stable individual differences (such as conscientiousness), malleable individual differences (such as self-efficacy) and environmental factors (such as supervisor support). Likewise, the success of feedback seeking depends on the presence or absence of other antecedents (such as openness to experience). Finally, whether that behaviour is repeated or reinforced is dependent on the outcome of its use: selected by consequence.

<u>Proposition 3:</u> The utilisation of learning agile behaviours and strategies leads to the positive outcomes associated with learning agility.

So far, this theory has proposed that a combination of (and interactions between) individual and environmental factors can predict the extent to which an individual is learning agile (proposition one), and that being learning agile enhances the likelihood of an individual exhibiting behaviours and strategies that are considered learning agile (proposition two). The third proposition of this theory proposes that it is the utilisation of these behaviours and strategies that explains the positive outcomes of learning agility observed in the literature. Take for example the finding of Sparr et al. (2017), that it is the utilisation of a combination of feedback-seeking and reflection (learning agile behaviours and strategies) that leads to the greatest transfer of training (a learning agile outcome). Whilst research shows that learning agility is associated with positive outcomes, such as enhanced work performance (De Meuse, 2019), the LADD theory postulates that the mechanism through which positive outcomes are achieved is with learning agile behaviours and strategies (such as feedback-seeking and reflection) (*see Figure 3*).

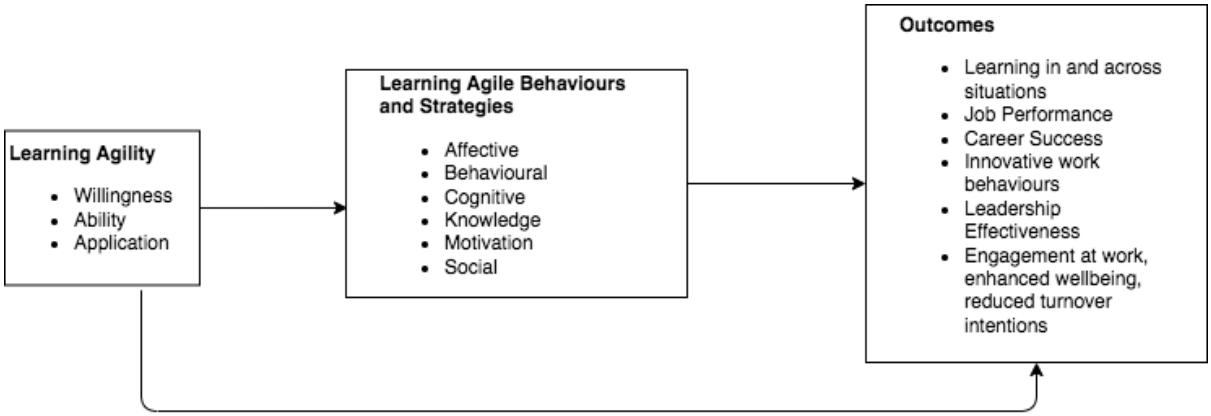

Figure 3 The author's illustration of proposition 3 of the LADD theory, with outcomes drawn from those observed in the literature.

To illustrate this, consider stress-management as an example of a learning agile behaviour or strategy: it can be learnt from experience and is crucial to positive outcomes such as work performance. To perform our best, we need to be at our best. However, three factors can erode our ability to be 'at our best': the cumulative impact of daily minor stressors, the impact of major stressful life events, and individual variations in how we deal with the first two factors (Maddaus, 2020). Research frequently shows that people need to manage stress and avoid burnout to continue to perform successfully at work (Handini, Kusnanto and Yuswanto, 2020). Resilience and effective coping can be learnt through experience. Thus, the theory postulates that learning agile individuals (through enhanced learning from experience) learn which stress-management strategies are most effective. These effective stress management techniques are learning agile behaviours and strategies which support individuals in continuing to perform even under stressful and challenging conditions.

Figure 3 also shows a direct effect of learning agility on outcomes. It is believed that learning agility may have direct positive effects on outcomes independent of the use of specific behaviours and strategies because learning agile individuals are more willing and able to utilise their past experiences to succeed in new ones. A recent moderated mediation model identified by Jo and Hong (2022) can be interpreted in support of this notion. They explored learning agility's impact on innovative behaviour as mediated by engagement with perceived organisational support as the moderator. Learning agility had the greatest impact on innovative behaviour for those with high engagement and high perceived organisational support. The LADD theory would argue that this is because engagement and perceived organisational support represents an increased willingness to apply lessons from experience; allowing learning agility to have a direct effect on innovative work behaviours. An alternate model which proved significant and was tested by Riswan *et al.*, (2021) placed digital readiness and engagement as predictors of learning agility and showed again that learning agility had direct effects on innovative work behaviour; even when accounting for the direct effects of digital readiness and engagement on innovative work behaviour. It may be possible that with additional mediators in either model which represent behaviours and strategies that the direct effect of learning agility may be reduced, however learning agility itself must account for some variance in the effectiveness of such strategies as they are learnt and refined through experience.

<u>Proposition 4:</u> The positive outcomes associated with learning agility reinforce learning agility.

This theory claims that selection by consequence may explain learning agility development. This role is captured in proposition four; learning agility is reinforced by its positive outcomes. Adler and Neiman (2021) recognised that learning agility, through seeking and acquiring feedback (a learning agile behaviour and strategy), increases learning from experience and thus learning agility itself. Therefore, the idea that learning agility – through its expression – can develop itself (as in a positive feedback loop) has begun to emerge in the most recent learning agility publications. However, it is yet to be integrated into a theoretical model. Key to the LADD theory is the idea that learning agility (through learning agile behaviours and strategies) results in positive outcomes which can act as extrinsic or intrinsic rewards. The LADD theory states that it is because, or when, the outcomes of using these strategies are rewarding that these responses are strengthened via selection by consequence, making them more readily available to an individual's behavioural repertoire when faced with future challenges. This cycle is illustrated in *Figure 4.*

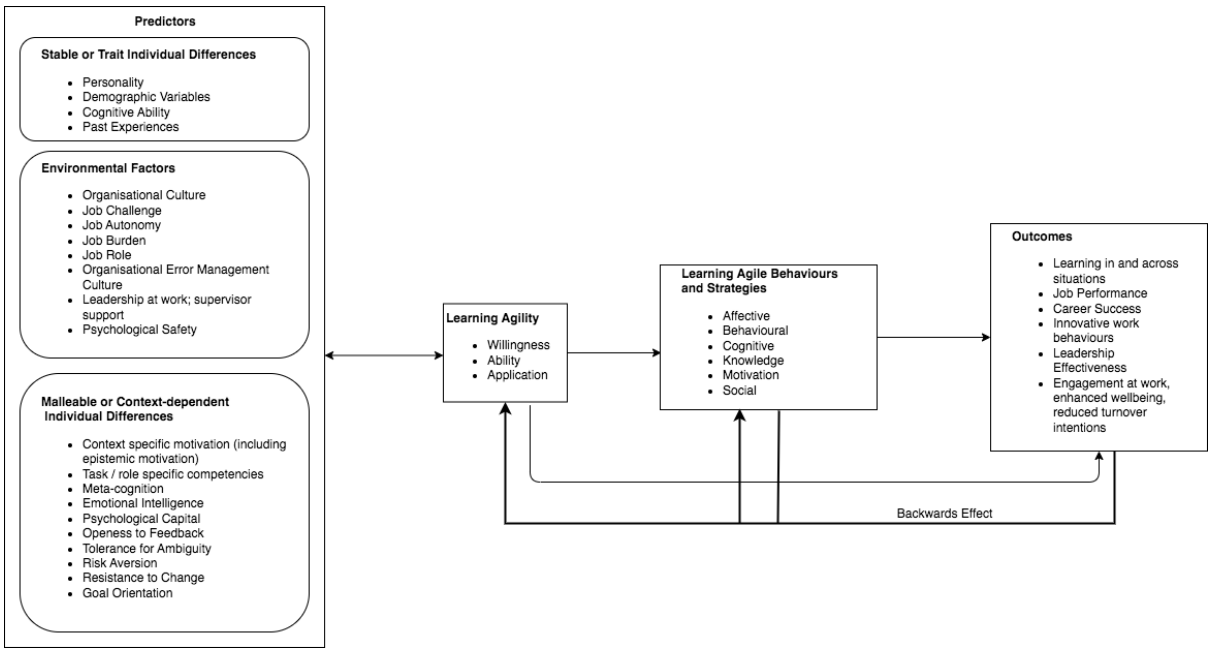

Figure 4 The author's illustration of proposition 4 of the LADD theory.

Positive outcomes which reinforce learning agility would be those that are either intrinsically or extrinsically rewarding. Extrinsic rewards are external and often tangible, such as financial rewards (bonuses, tips, pay rises) or rewards such as enhanced status or praise (Khan and Wisner, 2019). Indeed, learning agile outcome research suggests that learning agility predicts extrinsic rewards such as compensation and career growth (Dai, De Meuse and Tang, 2013). Extrinsic rewards can include things like food, certificates, awards, and positive feedback (Deci and Ryan, 2001). Extrinsic rewards reinforce behaviours, particularly if they are unexpected; such reinforced behaviours can include complex behaviours like knowledge acquisition, curiosity, and interest (Murayama, 2022) and is thus highly relevant to learning agility. If a learning agile behaviour or strategy, such as feedback seeking, is noticed and

rewarded by management (for example, by the supervisor praising this behaviour) then this behaviour is reinforced, and more likely to occur again in the future.

Intrinsic rewards most commonly refer to engaging in activities because they are 'rewarding in and of themselves' (Blain and Sharot, 2021); they are intrinsically rewarding because they fulfil a person's need to feel competent and their need to feel that they are acting by their own volition (Wiersma, 1992) increasing one's sense of self-efficacy (Blain and Sharot, 2021). If utilising learning agility and adopting learning agile behaviours and strategies increases a sense of self-efficacy, then this could be considered as intrinsically rewarding. Again, the outcomes observed in learning agility research suggest the presence of intrinsic rewards, such as increased self-efficacy, satisfaction, and engagement. Work performance can be extrinsically rewarded with tangible rewards such as bonuses or pay rises but also with supervisor or colleague praise. At the same time, work performance may be intrinsically rewarding by the pleasure associated with a job well done because performing well at work increases one's sense of competence and self-efficacy. Work performance can be both intrinsically and extrinsically rewarding. Thus, in terms of the LADD theory, increased work performance (due to learning agility or learning agile behaviours and strategies) is expected to be a powerful positive reinforcer of learning agility.

<u>Proposition 5:</u> The positive reinforcing cycle of learning agility is derailed by the introduction of limiting conditions into the system.

So far, this paper has discussed the propositions of the LADD theory relating to development; however, this theory also describes the process of derailment. In the language of systems thinking, these derailment factors are limiting conditions (Senge, 1990). These derailment factors can be the same factors that contribute to learning agility development, becoming derailment factors at extreme levels. For example, very low job demands may leave little opportunity to express learning agility, likewise very high job demands may leave little resources for the expression of learning agility. Critical to the LADD theory, the process of derailment is the same as development: selection by consequence. In this way, some instances of derailment demonstrate a 'dark side' of the positive feedback loop described by the LADD theory: derailment can occur when a behaviour or strategy is reinforced until it is no longer advantageous. Selection by consequence can both cause and limit this runaway process. To explain the process of derailment in the LADD theory, this section now focuses on a specific example: job demands.

In this example, learning agility (and learning agile behaviours and strategies) result in improved work performance. This improved work performance is rewarded by a promotion, which results in increased job demands. Here, increased job demands are the derailment factor or the limiting condition. Indeed, Kim (2018) found that whilst job challenge is usually positively associated with learning agility; this relationship becomes negative at very high or low levels. In *Figure 5,* the orange arrows represent the initial process; learning agility increases work performance, the improved work performance reinforces learning agility, and the strengthened learning agility further increases work performance: the self-enhancing positive feedback loop of learning agility. Work performance is improved until the individual is promoted to a more demanding role. The red arrow represents this introduction of a limiting condition in the system; the increased job demands (due to promotion) which is a result of increased work performance. Critically, this increase in job demands subsequently *decreases* work performance and thus stops the positive reinforcing cycle of learning agility development: it is derailed. Much in line with the semi-satirical Peter Principle whereby people are promoted to incompetence (Peter and Hull, 1969), the LADD theory would predict that, for a learning

agile individual, job demands could increase to the point that the learning agile individual derails: “the cream rises until it sours” (Peter and Hull, 1969, p. 35).

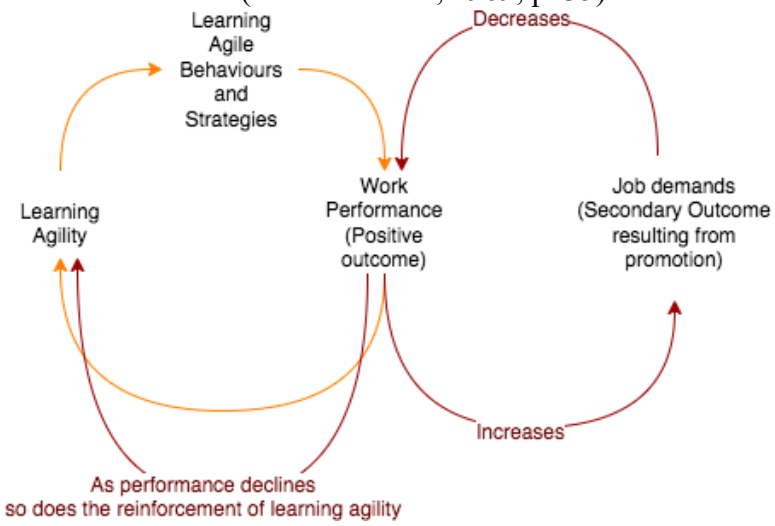

Figure 5 Author’s illustration of proposition 5 of the LADD theory in a systems thinking style diagram.

The exact level at which job demands derail learning agility is likely moderated by other predictors such as conscientiousness (stable individual difference). Those with high conscientiousness may have a higher tolerance for increased job demands while simultaneously having a lower tolerance for decreased job demands; the tolerance curve shifts right. The opposite may be true for an individual high in neuroticism. Likewise, environmental factors such as supervisor support or psychological safety may moderate derailment thresholds, with a higher tolerance for increased job demands for individuals in supportive environmental conditions. Evidence for such interactions exists. For example, when neurotic students were given an experimental task, they reported greater frustration in perceived workload than less neurotic students (Rose *et al.*, 2002). In students, personality and social support predicted burnout more than actual workload (Jacobs and Dodd, 2003). These findings highlight how critical individual differences are in understanding the threshold in which factors (and at which levels) may become derailers (rather than positive predictors) of learning agility.

As per proposition one of the theory, there are interactions between predictors of learning agility. Antecedents of learning agility may have synergistic effects, for example, increasing job satisfaction leading to increased organisational commitment. Therefore, when an antecedent becomes a derailment factor there may be ‘knock-on’ effects, potentially with catastrophic snowball events. Keeping with the job demands example, the LADD theory argues that increased job demands may negatively and directly impact other antecedents of learning agility. For example, increasing turnover intention, decreasing job satisfaction, decreasing engagement, and decreasing affective commitment (Bowling *et al.*, 2015). These knock-on effects, in turn, further negatively impact learning agility. For example, resulting decreases in organisational commitment could decrease the ‘willingness’ component of learning agility. Reducing the willingness component of learning agility reduces the expression of learning agility; i.e., the likelihood of engaging in learning agile behaviours and strategies (such as resilience at work behaviours). Should an individual no longer apply lessons from experience (such as their learnt resilience at work behaviours), this can further reduce their ability to cope with change, challenges, and demands, leading to further adverse outcomes. Just as learning

agility can be self-enhancing, so can the process of derailment – in a catastrophic way. Critically, to correct derailment, a manager should identify and target the limiting factor (i.e., job demands) to get the most leverage rather than the symptoms (i.e., the knock-on effects: turnover intention, job satisfaction, engagement, commitment).

The process of derailment described in the job demands example can be broadly applied to different antecedents of learning agility. Take risk tolerance as an example of a learning agile antecedent and strategy. If work rewards a risk-taking approach, it will increase the likelihood that an individual engages in a risky strategy at the next opportunity. However, if positive reinforcement continues, risk tolerance may reach such a level that the tendency to take risks becomes irresponsible and leads to catastrophic failure. *Figure 6* illustrates this in a systems thinking diagram. On the left of this figure is a simplified version of the reinforcement cycle in *Figure 4*. In this example, learning agility leads to positive outcomes via adopting a risk-taking strategy. Thus, the positive outcomes reinforce learning agility and the risk-taking strategy. On the right, we see the process of derailment. Whilst positive outcomes initially reinforce risk-taking, it does so until risk-taking becomes sufficiently high and becomes a limiting condition. As the risk-taking strategy increases to a sufficiently high level, it no longer leads to positive outcomes, interrupting the previous reinforcing cycle- in this example, correcting a runaway risk-taking approach. However, should this corrective cycle bleed over into other elements of the learning agility cycle beyond risk-taking strategy (for example, loss of self-esteem or job), it could have catastrophic impacts, causing learning agility derailment rather than correction.

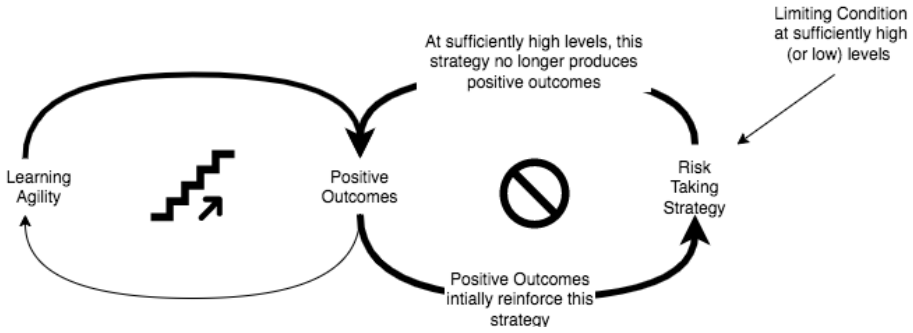

Figure 6 Risk taking causing learning agility derailment.

The Complete LADD theory

This paper has so far explained each of the five basic propositions of the LADD theory using diagrams to help explain the basic processes of the LADD theory, however the reality is more complex. *Figure 7* represents the complete the LADD theory, including moderating pathways. This new figure is not competing with the previously shown theory diagrams; for example, the systems thinking diagrams explaining derailment. Rather, it draws together the propositions to demonstrate a complete theory. The variables names in the diagram are exemplars drawn from the literature and do not compete with earlier proposals (for example, of what constitutes a stable versus malleable individual difference). Unlike earlier diagrams, this model more clearly demonstrates where interactions may be present. Firstly, predictors may interact with one another to predict learning agility. Secondly, they may interact with one another (or with learning agility) to predict learning agile behaviours and strategies. For example, that 'feedback seeking' as a learning agile behaviour or strategy may be more likely

to be present in learning agile individuals operating in an environment of high psychological safety. Thirdly, interactions may occur in the pathways between learning agile behaviours and strategies and outcomes; for example, that the effectiveness of a strategy depends on the environment. Finally, the presence (or absence) of predictors moderates the point at which another predictor becomes a derailment factor; for example, the point at which job demands become a derailment factor may be moderated by the extent to which an individual has high neuroticism and low conscientiousness.

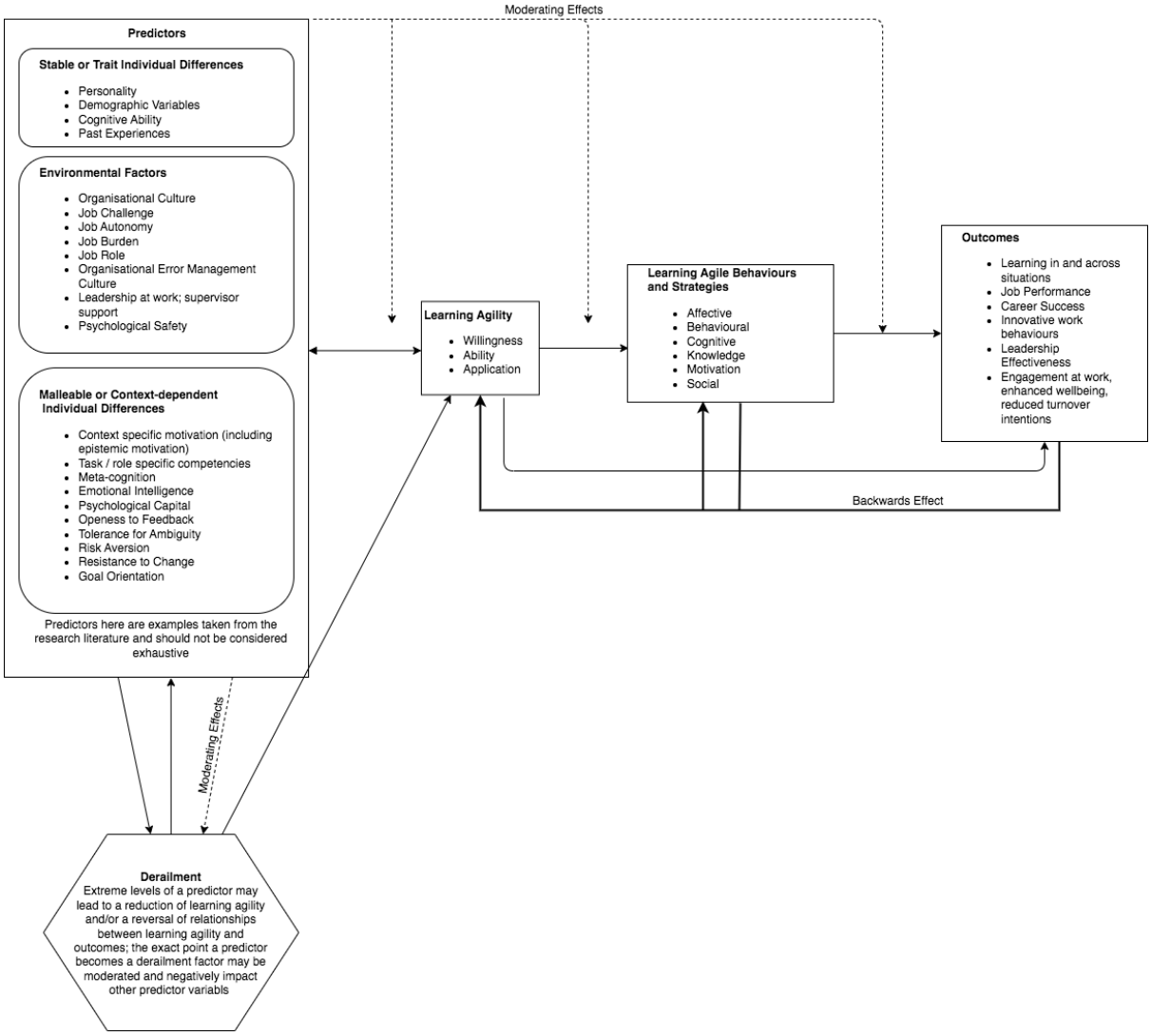

Figure 7 Author's illustration of the complete LADD theory. Illustrated with concepts from previous research.

This diagram also more accurately shows the proposed pathways of reinforcement. Positive outcomes (or rewards) associated with learning agility can reinforce learning agile behaviours and strategies, and that these strategies and the positive outcomes can reinforce learning agility. The double-headed arrow between predictors and learning agility in this diagram illustrates the bi-directionality of the relationship between learning agility and predictors; the reciprocity and synergistic effects that can occur. As a meta-competency, improvements in malleable individual differences positively impact learning agility; for example, increased self-efficacy may increase learning agility (for example, by enhancing willingness). Likewise, as a meta-competency, increase in learning agility may increase

predictors; for example, increasing self-efficacy (malleable individual difference), increasing experience (stable individual difference) by encouraging the seeking of new experiences, or increasing job challenge (environmental factor) by increasing the likelihood of receiving a new promotion.

This diagram also more clearly demonstrates the proposed path of derailment; that predictors that are usually positively associated with learning agility can become derailment factors at sufficiently high or low levels and that the level in which the construct becomes a derailment factor is moderated by the presence (or absence) of other predictors, and that derailment factors can have direct effects on other the predictors. For example, job challenge increasing to such a level that it derails learning agility. The level at which it is derailment is moderated by other predictors such as neuroticism or conscientiousness. However, this derailment factor then negatively impacts other predictors relating to the willingness and ability to learn from and apply lessons of experiences, for example it could damage tolerance for ambiguity, increase risk aversion, and resistance to change- which then subsequently lowers learning agility. This reduction in learning agility then reduces the use of learning agile behaviours and strategies, which reduces the experience of positive outcomes, which then further reduces the reinforcement of learning agility: derailment has occurred.

Future Work

To test the process described by the LADD theory, a quantitative intraindividual longitudinal exploration of variables existing in each construct space could be conducted. For example, beginning with the measurement of selected learning agile antecedents at time 1, learning agility is then measured at time 2. At time 3, learning agile behaviours and strategies will be measured, followed by learning agile outcomes at time 4. Statistical analyses, such as structural equation modelling, can then be employed to explore the validity of the proposed model and to explore the proposed positive reinforcement cycle described by the LADD theory; i.e., whether subsequent increases in learning agility are mediated by the experience of positive outcomes such as increased work performance. By doing so, researchers can empirically validate this process.

This paper has presented the LADD theory to address a gap in theorising by proposing that the central mechanism behind learning agility development and derailment is selection by consequence. This theory offers opportunities for further theoretical development and research; for example, exploring what can be included as a learning agile behaviour and strategy. Wisdom (Warhurst and Black, 2017) may be explored as a construct under 'learning agile behaviours and strategies'; learnt from experience and facilitating learning from experience[3]. Learning agility is the willingness and ability to learn from experience and the application of those lessons to new situations. However, the *appropriate* learning and *appropriate* application of those lessons of experience to new situation is likely guided by wisdom. This author would theorise that learning agility would facilitate the development of wisdom, and that wisdom would likewise facilitate the subsequent development of learning agility.

Future work must also explore which positive outcomes are most reinforcing, and whether there are interactions between the type of reinforcement and the type of learning agile behaviour or strategy. The mechanism of selection by consequence depends on the *individual's* appraisal of the consequence (rather than, for example, their organisation's); a promotion would only be a positive reinforcer if it aligns with the individual's desires. This theoretical assumption should be tested in future work. In addition, extensions of the presented theory

[3] Thanks to the anonymous reviewer for signposting to this excellent work.

should focus on establishing boundary conditions; the theory is primarily focused on the individual; however, it is possible to explore whether this theory (specifically the processes in the theory) could be extended to different levels of analysis, and to explore under which conditions the theory holds. Of interest would be how the LADD theory and selection by consequence holds in a team which consists of different appraisals of outcomes.

Conclusion.

This paper has presented a novel synthesis of learning agility theorising and research, classical learning theory, and abductive reasoning to propose a theory of learning agility development and derailment (LADD). According to the LADD theory, learning agile behaviours and strategies are reinforced via selection by consequence which creates a positive feedback loop making learning agility self-enhancing. However, there is a dark side to this positive feedback loop in that it can also cause derailment; should a previously positive predictor of learning agility (such as job challenge) continue to be enhanced, it can cause the breakdown of learning agility via its actions on other predictors in the model. Further, as this process relies on extrinsic and intrinsic rewards, personal and environmental factors play important moderating roles in the availability, receipt, and appraisal of such rewards. In the current VUCA climate, where continuous learning and unlearning are critical, it is crucial to understand how individuals learn to learn from experience: how they learn to be more learning agile. This theory may facilitate management practitioners in developing the learning agility of their employees and preventing its derailment so that individuals and organisations can enjoy sustainable success in an ever-changing environment.

This theory relates to an important business problem: organisations need learning agile individuals in a disrupted and dynamic environment, but these are currently in limited supply (Hoff and Smith, 2020). Understanding how and when learning agility develops may help organisations to develop and grow learning agile leaders. This theory argues that every individual has the potential to be learning agile. By improving the understanding of learning agility and how it develops, the theory and subsequent work may provide tools and frameworks for individuals, organisations, and researchers to develop learning agility rather than derail it.

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